



BTEC Assignment Brief

Qualification	Pearson BTEC International Level 3 qualifications in Sport
Unit number and title	Unit 8: Anatomy and Physiology for Exercise and Physical Activity
Learning aims	C: Explore the energy and digestive systems and their responses to in exercise and physical activity D: Explore the nervous and endocrine systems and their responses to exercise and physical activity
Assignment title	A presentation evaluating the energy, digestive, nervous and endocrine systems and the effects of exercise on each system.
Assessor	
Issue date	
Hand in deadline	

Vocational Scenario or Context	Your college/school has recently partnered with a professional rugby union team. The senior coach of the first team has an interest in anatomy and physiology and is keen for his players to learn more about their bodies and the impact of exercise to help increase their performance in training and competition. The coach has asked you to produce a presentation which evaluates the energy, digestive, nervous and endocrine systems. This should include diagrams as well as information which the players can use to gain an understanding of the relationship of these systems and exercise.
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Task 1	A presentation evaluating the energy, digestive, nervous and endocrine systems and the effects of exercise on each system You have been asked to produce a presentation (or report) which must include a range of information which considers the significance of the structure and function of the digestive, energy, nervous and endocrine systems and how they work together for one bout of aerobic and one bout of anaerobic exercise. Your information should explore the effects over an exercise period of around 30 minutes so that steady state has been attained. A summary of the suggested content for each section of your presentation (or report) follows: Section 1: Structure and function of the digestive system • Structure and function of each part of the digestive system • Digestion of fats, proteins, carbohydrates, main enzymes involved
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- Dietary fibre sources and function
- Function of the liver in digestion
- Function of the pancreas in digestion
- Timescales for digesting different macronutrients
- The effect of healthy eating on the body systems
- Fluid in digestion

Section 2: Energy systems

- The role of Adenosine Triphosphate (ATP)
- Phosphocreatine.
- Lactic acid system and anaerobic glycolysis
- Aerobic energy system -structure and role of mitochondria
- Amount of ATP produced by each system
- Use of carbohydrates, fats and proteins in the production of ATP

Section 3: Energy and digestive systems response to exercise:

- Response to acute exercise
- Recovery from acute exercise
- Response to chronic exercise

Section 4: Explore the nervous system and endocrine systems and their response to exercise and physical activity

- Structure and function of a neuron and nerve cell
- Role and functions of the nervous system
- Principles of muscle contraction
- The 'all or none' law/motor unit recruitment
- The stretch reflex

Section 5: Endocrine system

- Hormones
- Glands

Criteria covered by this task:

Unit/Criteria reference	To achieve the criteria, you must show that you are able to:
C.P6	Explain the structure and function of the digestive and energy systems system and the effects of aerobic and anaerobic exercise on each system.



D.P7	Explain the structure and function of the nervous and endocrine systems and the effects.
C.M3	Assess the effects of aerobic and anaerobic exercise on the digestive and endocrine body systems.
D.M4	Assess the effects of exercise on the nervous and endocrine systems.
CD.D2	Evaluate the interrelationships of digestive, energy, nervous and endocrine systems and their response to aerobic and anaerobic exercise.
Checklist of evidence required	A presentation evaluating the energy, digestive, nervous and endocrine systems and the effects of exercise on each system with information covering the following: • Structure and function of the digestive system • Energy systems • Energy and digestive systems response to exercise • Nervous system • Endocrine system • Nervous and endocrines systems responses to exercise • The nervous system in special populations
Sources of information to support you with this Assignment	Textbooks Adams, M. et al - BTEC Level 3 National Sport (Performance and Excellence) Student Book (Pearson, 2016) ISBN 9781292134000 Barker, R. et al - BTEC Level 3 National Sport Book 1 (BTEC National Sport) Paperback (Pearson, 2010) ISBN-13: 978-1846906510 Tortora, G.J and Derrickson, B.H - Tortora's Principles of Anatomy and Physiology (May 2017) John Wiley & Sons; 15th Edition, Global edition (26 May 2017) ISBN-13 978-1119400066
Other assessment materials attached to this brief	